(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 17 February 2005 (17.02.2005)

(10) International Publication Number WO 2005/014642 A2

- C07K 14/54. (51) International Patent Classification7: 14/55, C12N 15/62, 15/861, A61K 48/00, 38/19
- (21) International Application Number:

PCT/EP2004/008114

- (22) International Filing Date:
- 20 July 2004 (20.07.2004)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

03360086.7

21 July 2003 (21.07.2003) EP

- 60/539,320
- 28 January 2004 (28.01.2004) US
- (71) Applicant (for all designated States except US): TRANS-GENE S.A. [FR/FR]; 11, rue de Molsheim, F-67082 Strasbourg Cedex (FR).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): PAUL, Stéphane [FR/FR]; 27, rue Bautain, F-67000 Strasbourg (FR).
- (74) Agent: VOSSIUS & PARTNER; Siebertstrasse 4, 81675 Munich (DE).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): All, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL MULTIFUNCTIONAL CYTOKINES

(57) Abstract: The present invention relates to a novel fusion protein with the formula X-Y, or Y-X, wherein X represents a first immunoregulating polypeptide and Y represents a second immunoregulating polypeptide different from X. The present invention also relates to a nucleic acid molecule encoding such a fusion protein and a vector comprising such a nucleic acid molecule. The present invention also provides infectious viral particles and host cells comprising such a nucleic acid molecule or such a vector as well as a process for producing such infectious viral particles. The present invention also relates to a method for recombinantly producing such a fusion protein. Finally, the present invention also provides a pharmaceutical composition comprising such a fusion protein, a nucleic acid molecule, a vector, infectious viral particles and a host cell as well as the therapeutic use thereof.

